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July Coordinators Meeting

Randall Brown, DWR

On the morning of July 11, the coordinators met with Pat Coulston to discuss several issues regarding future program direction. A couple of the agenda items may of interest.

Boat Safety

Overall, the Interagency Program has had an excellent boat safety record, but there have been accidents. The coordinators agreed to develop an interagency boat safety program; efforts will be led by USBR staff reporting to the Management Team. The program will also include automobile safety from the time the field crew leaves and returns to their homes or offices. The need for a formal program has become more pressing with the deployment of several boats and crews as part of the real-time monitoring program. The goal is to have the program in place before the October directors' meeting.

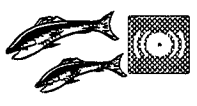
Long-Range planning

We agreed to set up a small subset of the coordinators and management team members to help determine where the program should be heading for the next several years. Leo Winternitz will be collecting names for potential members, and I may chair the group.

Data Management

The coordinators agreed that the data management group has done a great job bringing the program into the information age — and in such a relatively short time. We also agreed that Karl Jacobs and Chuck Armor are to continue directing the work of appropriate staff to enhance capabilities of the interagency web site. Karl, Chuck, and staff are developing a pilot test of a relational database using much of the FWS salmon dataset.

TECHNICAL REPORT 44 NOW AVAILABLE



**Georgiana Slough Acoustic Barrier
Applied Research Project:
Results of 1994 Phase II Field Tests**

Prepared by
San Luis and Delta Mendota Water Authority
and
Charles Hanson, Ph.D., Hanson Environmental

for
Department of Water Resources
and
U. S. Bureau of Reclamation

Contact Lisa Batiste at (916) 227-7541 to request a copy

Observations of Larval Smelt and Splittail in a Dry Year and in a Wet Year

Johnson Wang (National Environmental Sciences, Inc)

In 1995, California had near record high rainfall. High sustained flow that winter and spring provided unusual spawning conditions for resident fish, which contrasted sharply with conditions in 1994, one of the driest years on record. I looked at differences in abundance and capture location between the two year types for four fish species: longfin smelt, a native that spawns in brackish water; delta smelt, a native that spawns in either brackish or fresh water; waka-sagi, an introduced fish that usually spawns in fresh water farther upstream than the delta smelt; and splittail, a native that spawns in fresh water.

There are two purposes of this preliminary examination:

- To describe the pattern and trend of the occurrence of fish larvae in a very dry year and very wet year to hypothesize how the fish respond to environmental changes.
- To look at existing information from various baseline studies to gain a better understanding of resident fish.

This could benefit the design of future studies. Interagency Ecological Program staff will be analyzing these and other data in more detail.

Major sources of information used in this study include:

- Egg and larvae samples collected by DFG in Suisun Bay, Montezuma Slough; the confluence and lower Sacramento and San Joaquin rivers; Chipps Island; Cache Slough and North Bay Aqueduct; and lower Mokelumne River. (DFG examined 2,368 samples in 1994; I considered data from sampling stations compa-

rable to those used in 1995. In 1995, 1,169 samples were examined.)

- Egg and larvae samples collected by DWR in the central and southern delta (1994, 537 samples; 1995, 250 samples).

Supplemental samples include:

- USBR egg/larvae entrainment study at CVP in 1994 and 1995.
- DWR egg/larvae and juvenile fish studies at agricultural diversion sites in 1994 and 1995.
- DFG egg/larvae study at Liberty Island in 1995.
- DFG 20mm fish survey (by modified tow-net) in 1995.
- PG&E egg/larvae and juvenile fish studies near Chipps Island in 1995.

Longfin Smelt

Data for longfin smelt larvae collected in 1994 and 1995 are summarized in Table 1. In 1994 (dry year), the larvae were concentrated in Suisun Bay, below Chipps Island, from February to April. Some larvae were found in Cache Slough and in the central/southern delta. In 1995 (wet year, with high freshwater flow and low salinity), it appears that longfin smelt may have spawned mostly in San Pablo Bay in February and March. Larvae were found upstream in Suisun Bay and upstream into areas such as in 1994, but they were quickly pushed back into San Pablo Bay by the high flow. Hieb (1995a) found juvenile longfin smelt to be abundant in central and lower San Pablo Bay.

Fish species showing similar larval distribution to longfin smelt in 1994 were Pacific herring, northern anchovy, jacksmelt, yellowfin goby,

and shimofuri goby. In 1995, Pacific herring, northern anchovy, and jacksmelt failed to show up in Suisun Bay and the delta; yellowfin goby and shimofuri goby invaded both Suisun Bay and the delta slowly and in much less abundance than 1994.

Delta Smelt

Occurrence of delta smelt larvae is shown in Table 2. In March-May 1994, larvae were abundant in Suisun Bay upstream to Cache Slough and the central-southern delta. Apparently, the center of spawning was near Rio Vista to the river confluence, including the lower San Joaquin River. In 1995, larval distribution patterns were rather obscure. In May-June 1995, small concentrations of larvae were observed in Suisun Bay below Chipps Island and in the lower Mokelumne River. Cache Slough, heavily used for spawning in 1994, was apparently used only marginally in 1995. However, information from other baseline studies (Winternitz 1995) indicates that early juvenile stages of delta smelt were far more abundant than the larval stages shown in Table 2.

What happened to this upside-down "pyramid" scenario? It is suggested that a small number of delta smelt larvae observed in Suisun Bay and the capturing of delta smelt larvae and early juveniles in the lower Napa River and upper San Pablo Bay (by modified tow-net) indicate that areas around Suisun Bay were likely delta smelt spawning grounds and that similar areas in San Pablo Bay such as the Napa River could be another part of the spawning ground.